NON-PUBLIC?: N
ACCESSION #: 9204280333
LICENSEE EVENT REPORT (LER)

FACILITY NAME: PLANT E. I. HATCH UNIT 1 PAGE: 1 OF 4

DOCKET NUMBER: 05000321

TITLE: PERSONNEL ERROR RESULTS IN LOW REACTOR WATER LEVEL AND A REACTOR
SCRAM
EVENT DATE: 03/28/92 LER #: 92-009-00 REPORT DATE: 04/23/92

OTHER FACILITIES INVOLVED: DOCKET NO: 05000

OPERATING MODE: 1 POWER LEVEL: 100

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR SECTION:
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:
NAME: STEVEN B. TIPPS, MANAGER NUCLEAR TELEPHONE: (912) 367-7851
SAFETY AND COMPLIANCE, HATCH

COMPONENT FAILURE DESCRIPTION:
CAUSE: SYSTEM: COMPONENT: MANUFACTURER:
REPORTABLE NPRDS:

SUPPLEMENTAL REPORT EXPECTED: NO

ABSTRACT:

On 3/28/92 at 0432 CST, Unit 1 was in the Run mode at a power level of 2436 CMWT (100% rated thermal power). At that time, reactor water level decreased as a result of operator actions in response to a feedwater flow transient caused by a momentary loss of power to the Reactor Feedwater Pump Turbine (RFPT) control system. When power was interrupted, flow from both Reactor Feedwater Pumps (RFPs) began to decrease causing water level to decrease. A licensed Operator took manual control of the RFPs, but was unable to prevent water level from decreasing to the scram and Group 2 PCIS isolation setpoint. The reactor scrammed and the Group 2 Primary Containment Isolation Valves closed per design. Water level reached a minimum of 12 inches below instrument zero (146 inches above the top of the active fuel). Operations personnel restored water level with the RFPs. No Emergency Core Cooling Systems initiated nor were any

required to do so. Reactor pressure was controlled automatically with the Main Turbine Bypass Valves. No Safety Relief Valves were required to lift.

The causes of this e
ent are personnel error and a less than adequate procedure. The Unit 1 Shift Supervisor mistakenly opened the supply breaker to 600V bus 1B thereby causing a loss of power to the RFPT control system. Procedure 34SO-R23-004-1S, "Hot Transfer of 600V AC System," did not require Danger tags to be hung on breaker control switches before breaker racking operations were performed. Corrective actions for this event include counseling involved personnel and revising appropriate procedures.

END OF ABSTRACT

PLANT AND SYSTEM IDENTIFICATION

General Electric - Boiling Water Reactor
Energy Industry Identification System codes are identified in the text as (EIIS Code XX).

DESCRIPTION OF EVENT

On 3/28/92 at 0420 CST, Unit 1 was in the Run mode at a power level of 2436 CMWT (100% rated thermal power). At that time, work was in progress to replace the oil in various plant transformers as part of the project to eliminate polychlorinated biphenyl (PCB) from the transformers. Each transformer was to be de-energized, its oil drained, new oil added, and the transformer re-energized. Work on Unit 1 non-class 1E 4160V/600V transformer 1A had been completed and the transformer re-energized. Plant personnel were preparing to replace the oil in Unit 1 non-class 1E 4160V/600V transformer 1B.

In order to de-energize transformer 1B to replace its oil, its load, 600V bus 1B (EIIS Code EA), had to be transferred to alternate 4160V/600V transformer 1AB. Per procedure 34SO-R23-004-1S, "Hot Transfer of 600V AC System," the 4160V supply breaker to alternate transformer 1AB had to be physically relocated from 4160V bus 1C to 4160V bus 1D. (Having only one movable supply breaker for the two 4160V supplies to transformer 1AB prevents 4160V busses 1C and 1D from inadvertently being crossconnected.) To that end, the Unit 1 Operator opened the 4160V supply breaker to alternate transformer 1AB with the control switch in the Main Control Room. Maintenance personnel then proceeded to move the 4160V supply

breaker from 4160V bus 1C to 4160V bus 1D per procedure 34SO-R23-004-1S. The breaker was successfully moved to its proper location in bus 1D and its control power was turned on.

At approximately 0432 CST, the Unit 1 Shift Supervisor was standing at the Unit 1 control panel reviewing the electrical line-up. He felt, based on his observation of the breaker indicating lights on the panel, that the 4160V supply breaker to alternate transformer 1AB was not open. However, he had mistaken the indicating lights for the closed normal supply breaker to 600V bus 1B for the lights for the supply breaker to alternate transformer 1AB. Believing that maintenance personnel were in the process of moving the 4160V supply breaker, and being concerned for their safety, he asked for and received concurrence from the Unit 1 Operator to open the breaker. Then thinking he was opening the alternate transformer 1AB supply breaker, the Unit 1 Shift Supervisor opened the 600V bus 1B normal supply breaker de-energizing the 600V bus.

This action momentarily de-energized the power supply to the A and B Reactor Feedwater Pump Turbine (RFPT, EIIS Code SJ) control system. Power to the RFPT control system was restored approximately 1.5 seconds later when its power supply automatically transferred to 600V bus 1A (EIIS Code EA) per design. Flow from the A and B Reactor Feedwater Pumps (RFPs, EIIS Code SJ) immediately began to decrease resulting in reactor water level decreasing as well. About eight

seconds later, RFP flow and reactor water level began to increase as the RFPT control system stabilized and demand to the now energized RFPT control system went to 100% in response to the low water level condition.

The Unit 1 Operator took manual control of the RFPs in an effort to prevent a high water level condition and avoid the resulting RFPT and Main Turbine high water level trips. He decreased RFP flow and prevented water level from reaching the RFPT and Main Turbine trip setpoint. In doing so, however, he reduced flow to the point where water level decreased to the scram and Group 2 Primary Containment Isolation System (PCIS, EIIS Code JM) isolation setpoint of 12.5 inches above instrument zero (171 inches above the top of the active fuel) before he could increase flow again. At 0432 CST, the reactor scrammed and the Group 2 Primary Containment Isolation Valves (EIIS Code JM) closed per design. Water level reached a minimum of 12 inches below instrument zero (146 inches above the top of the active fuel) before being recovered with the RFPs. No Emergency Core Cooling Systems initiated nor were any required to do so.

Reactor pressure was controlled automatically with the Main Turbine Bypass Valves (EIIS Code SO). No Safety Relief Valves lifted nor were any required to lift.

CAUSE OF EVENT

This event was caused by personnel error and a less than adequate procedure. The Unit 1 Shift Supervisor, a licensed individual, mistook the 600V bus 1B normal supply breaker, which was closed, for the alternate transformer 1AB supply breaker. He knew the transformer supply breaker should have been open and, after getting concurrence from the Unit 1 Operator, opened what he thought was the correct breaker. He instead opened the 600V bus 1B normal supply breaker thereby de-energizing the bus and causing a loss of power to the RFPT control system. In attempting to manually adjust feedwater flow, the operator inadvertently reduced flow to the point that reactor water level reached the scram and Group 2 isolation setpoints.

Procedure 34SO-R23-004-1S was less than adequate in that it did not require Danger tags to be hung on breaker control switches before breaker racking operations were performed. A Danger tag is an administrative device which prevents equipment from being operated when doing so might damage the equipment and/or injure personnel. In this event, a Danger tag hung on the control switch for the transformer 1AB supply breaker would have served to identify more clearly the breaker being moved. Furthermore, it would have assured the Shift Supervisor that the breaker was in the open position in addition to providing greater personnel safety.

REPORTABILITY ANALYSIS AND SAFETY ASSESSMENT

This report is required per 10 CFR 50.73(a)(2)(iv) because unplanned actuations of the Reactor Protection System (RPS, EIIS Code JC) and the Group 2 PCIS, an Engineered Safety Feature system, occurred. Specifically, the RPS and the Group

2 PCIS were initiated automatically on low reactor water level per design. Water level decreased when power to the RFPT control system was momentarily lost when the supply breaker to 600V bus 1B was opened inadvertently.

The RPS provides timely protection against the onset and consequences of conditions that could threaten the integrity of the fuel barriers and the nuclear system process barrier. A reactor scram initiated by a low water

level condition protects the fuel by reducing the fission heat generation within the core.

In this event, reactor water level decreased as a result of a momentary loss of power to the RFPT control system. The RPS and the Group 2 PCIS functioned per design. Reactor water level was restored quickly by using the RFPs. At no time was water level less than 146 inches above the top of the active fuel. Based on this information, it is concluded that this event had no adverse impact on nuclear safety. The above analysis is applicable to all power levels.

CORRECTIVE ACTIONS

The Unit 1 Shift Supervisor who opened the wrong breaker was counseled.

Procedure 34SO-R23-004-1S has been temporarily revised to require Danger tags to be hung on breaker control switches before breaker racking operations are performed. This revision will become permanent by 6/8/92.

Other Unit 1 and Unit 2 procedures which provide instructions for breaker racking operations also will be revised to require Danger tags to be hung on breaker control switches before such operations are performed. These revisions will be effective by 9/30/92.

ADDITIONAL INFORMATION

No systems other than those previously mentioned were affected by this event.

No failed components caused or resulted from this event.

Previous similar events in the last two years in which a scram was caused by personnel error were reported in the following Licensee Event Reports:

50-321/1990-011, dated 6/22/91
50-321/1991-007, dated 3/27/91
50-321/1991-017, dated 10/9/91
50-321/1991-026, dated 12/4/91
50-366/1991-005, dated 3/15/91.

Corrective actions for the previous events would not have prevented this event because the previous events involved different persons performing different activities.

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W. G. Hairston, III
Senior Vice President HL-2182
Nuclear Operations 003322

April 23, 1992

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
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PLANT HATCH - UNIT 1
NRC DOCKET 50-321

OPERATING LICENSE DPR-57
LICENSEE EVENT REPORT
PERSONNEL ERROR RESULTS IN
LOW REACTOR WATER LEVEL AND A REACTOR SCRAM

Gentlemen:

In accordance with the requirements of 10 CFR 50.73(a)(2)(iv), Georgia Power Company is submitting the enclosed Licensee Event Report (LER) concerning a personnel error which resulted in low reactor water level and a reactor scram. This event occurred at Plant Hatch - Unit 1.

Sincerely,

W. G. Hairston, III

MCM/cr

Enclosure: LER 50-321/1992-009

cc: Georgia Power Company
Mr. H. L. Sumner, General Manager - Nuclear Plant
NORMS

U.S. Nuclear Regulatory Commission, Washington, D.C.
Mr. K. Jabbour, Licensing Project Manager - Hatch

U.S. Nuclear Regulatory Commission, Region II
Mr. S. D. Ebneter, Regional Administrator
Mr. L. D. Wert, Senior Resident Inspector - Hatch

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